



California Regional Water Quality Control Board Central Valley Region

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DATE: 23 September 2009

2008 ANNUAL MONITORING REPORT REVIEW - SOUTH SAN JOAQUIN IRRIGATION DISTRICT

The California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) staff reviewed the Annual Monitoring Report (AMR) for the South San Joaquin Irrigation District (District) dated 27 February 2009. The District submitted this report to meet the conditions of the Monitoring and Reporting Program (MRP) Order No. R5-2003-0827 (Order) for Individual Discharges under Amended Resolution No. R5-2006-0054 and the associated Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Conditional Waiver) adopted by the Central Valley Water Board.

Central Valley Water Board staff reviewed the AMR to evaluate it for the required reporting conditions described in the Order and in the District's MRP Plan. In this memorandum, staff presents their comments and recommendations pursuant to the Order and MRP Plan. The review is divided into sections. The section titles are the same as the titles used in the attached AMR Checklist.

ADMINISTRATIVE ASPECTS

Item 1, 2, 3: Signed Transmittal Letter, Title Page, Table of Contents

The AMR included these required components described in the Order. Staff recommends that the section names in future reports match those found in the MRP section III.C. Annual Monitoring Report components.

Item 4: Executive Summary

Although the Executive Summary is not a required component of the AMR, it is general practice that the Executive Summary briefly summarizes the activities, results, and conclusions and recommendations. The District should also briefly note when and where sampling did not take place. The current Executive Summary summarizes a chronology of MRP compliance and contact information.

Item 6: Monitoring Objectives and Design

Pursuant to the MRP, the District is scheduled to collect samples four times per year. The MRP Plan includes two irrigation events and two storm events. The District conducted its July

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and September irrigation season events, but not its two storm season events because the drains were dry or conditions did not allow runoff from the agricultural fields. When the site is dry, the District must provide sufficient information such as site photos and rainfall records to support the missed sampling events. Staff has previously requested in earlier AMR reviews and Central Valley Water Board correspondence that this kind of evidence must be presented to support the missed storm events.

In a 15 September 2009 phone call, the District stated it submitted rainfall records and photo documentation to the Central Valley Water Board on 10 September as an addendum. Staff received the addendum on 14 September. The District attempted to conduct storm season monitoring three times. The addendum provided photos and rainfall records indicating dry conditions or standing water at the sites on 23 January, 16 February and 3 March 2009. Drain 14 was dry during all three sampling attempts. Drains 11 and 12 either had standing water or were dry during the sampling attempts. The standing water was reported to be from ground water upwelling or rain water collection, but not runoff from the agricultural fields.

The main objective of the District is to assess the impacts of applications made to the canal and rights-of-way and not necessarily from the farm fields. To be consistent with the ILRP General Procedures for Low Flow or No-Flow Conditions, as distributed to the Technical Issues Committee on 7 April 2008 and 16 September 2009, the District should be collecting samples in standing water if the conditions to trigger a storm sampling event occur. The protocol is quoted below.

Low or No-Flow Conditions – Water Samples

Even in low flow or no-flow conditions, most waters of the State have the beneficial use of aquatic life or wildlife habitat, and therefore the presence of toxicants in toxic amounts is an exceedance of Basin Plan Objectives. The potential effect of agricultural discharge on the local ecosystem must be considered.

If the water level is very low or there is no flow and the situation seems more puddle-like with standing water, results for measurements such as pH, DO, and other field measures must include information clearly in the field notes, that the measurements will likely be influenced by the low-flow conditions. Include documentation regarding the flow in the field log, the chain of custody and through photo-documentation as well.

When samples are collected where there is only standing water, the data will be flagged. Please note that data collected from sites where standing water was observed shall not be used on load calculations. The absence of flow excludes these types of data from such calculations.

It is assumed that the runoff from the drain banks may not be physically visible, but could drain and collect in the District's drains.

Item 9: Tabulated Results of all Analyses Presented

Staff prepared Table 1 below reporting the result for each required analyte, as generated from the submitted monitoring data. The gray shaded fields represent the exceedances. According to the data, a flagged detection of diuron was observed, while the other pesticides had no detections. The diuron detection did not qualify because it was less than the reporting limit of 0.4 ug/L. Two pH and two dissolved oxygen exceedances were observed. The District did not observe any pesticide exceedances for the monitoring period.

The District collected and analyzed the samples according to the MRP Plan, and reported the analytical results as text, but not in tabular form. The MRP requires that results must be presented in tabular form. Page 9 of the MRP states, *"In reporting monitoring data, the District shall arrange the data in tabular form so that the required information is readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with the conditions of the [Conditional] Waiver."*

On 15 September 2009, staff contacted the District regarding the format. Since staff had already tabulated the water quality data to assess compliance, the District was not requested to prepare another table. The District stated it had technical difficulties with producing a table. Staff emailed Table 1 to the District for future reference to be used as a model for the 2009/2010 AMR.

Table 1. SSJID 2008 Monitoring Results

SampleDate	StationName	Bromacil (ug/L)	Diuron (ug/L)	Glyphosate (ug/L)	Prodiamine (ug/L)	Triclopyr (ug/L)	pH	Temperature (c)	Dissolved Oxygen (mg/L)	Electrical Conductivity (umhos/cm)	Total Dissolved Solids (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Total Organic Carbon (mg/L)	Total Phosphorus as P (mg/L)	Turbidity
7/22/08	Drain 11	-0.5	-0.4	-5	-0.1	-0.1	7.29	18.52	6.65	0.261	158	-0.5	4.2	0.28	2.57
	Drain 12	-0.5	0.2	-5	-0.1	-0.1	7.49	20.93	5.14	0.161	104	1.2	5.8	0.26	16.8
	Drain 14	-0.5	-0.4	-10	-0.1	-0.1	7.55	19.82	4.86	0.117	59	1.3	3.6	0.36	3.86
9/15/08	Drain 11	-0.5	-0.4	-5	-0.1	-0.1	4.34	19.43	5.24	0.152	105	-0.5	4.7	0.1	2.73
	Drain 12	-0.5	-0.4	-30	-0.1	-0.1	6.9	19.66	4.3	0.122	102	-0.5	3.6	0.49	33.1
	Drain 14	-0.5	-0.4	-5	-0.1	-0.1	4.96	18.49	9.53	0.074	79	-0.5	4	0.23	5.62

Shaded = exceeded trigger limit

Storm season dry

To meet the MRP monitoring objective of assessing the impacts of waste discharges to surface water, the District should coordinate monitoring with applications to be more representative of the actual timing of applications. Currently, the two irrigation season events are either two or more months after application of three of the five pesticides or one or more months before application (see Table 2). The current sampling schedule could be more representative of potential runoff if the sampling schedule is more closely coordinated with the applications. Staff recognizes that the sampling schedule described in the MRP Plan was

originally designed to be representative of high flow during July and low flow during September.

Section 3.1.2 discusses the 15 September 2008 monitoring event, but the results reported in this Section for pH, specific conductance, DO, and turbidity are from the July event.

Item 14: Pesticide Use Reports

This section reports the pesticides used by the District and certain pesticides that are subject to the District's current NPDES permit (Aquamaster, Magnacide). According to the PURs presented in the AMR, the District also used the pesticide triclopyr (Garlon 3A), which should also be indicated in Section 1.3.

Staff prepared Table 2 below reporting the pesticide, month of application, and the month when the sample event occurred. The MRP requires that the sampling schedule include four monitoring events: two irrigation and two storm events. Storm event sampling could not be conducted by the District due to dry conditions.

Table 2. SSJID Pesticide Applications During 2008

Trade Name	Active Ingredient	Month Applied											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Round-up Pro Concentrate	Glyphosate	x	x	x	x	x	x	x	x	x	x	x	x
Krovar IDF	Bromacil / Diuron mix	x	x	x	x						x	x	
Diurex 4L	Diuron	x		x	x						x	x	x
Endurance	Prodiamine		x	x									x
Garlon 3A	Triclopyr				x			x	x		x		

x = Month of pesticide application

Shade=month of sample event

ANALYTICAL APSECTS

Item 13: Summary of Precision and Accuracy

Laboratory QA/QC complies with the Conditional Waiver requirements with a sufficient number of spikes, method blanks, equipment blanks, field duplicates, laboratory control samples, surrogates, continuing calibration verification, and calculated relative percent difference. Like the monitoring data, the QC should be summarized in tabular format to meet the conditions of the MRP Order. Some of the MS/MSD did not meet acceptance criteria and these occurrences should have been discussed in the report as part of the District's assessment of the monitoring objectives.

To accompany the QC tabulation, the District should identify acceptance criteria for all measurements of precision and accuracy by:

- Identifying any QA/QC results that did not meet acceptance criteria and discuss corrective actions rather than directing the reader to the laboratory report
- Calculate and report completeness, precision, and accuracy by calculating the percentage of QC data that met acceptance criteria
- Document and discuss any adjustments made to acceptance criteria (if any)

Item 16: Summary of Management Practices Used by the District

The District did not observe any pesticide exceedances for the chemicals it applied during the sampling events. As part of the management practices, the District reported that it followed the pesticide label instructions, obtained the required permits, and filed its annual Notice of Intent with the California Department of Fish and Game.

Item 19: Conclusions and Recommendations

Section 4.4 should describe the conclusions and recommendations made by the Coalition, based on the monitoring results and interpretations provided in the AMR. The District's conclusions must be supported by the data presented and discussed within the AMR. Since the MRP Plan is designed to achieve certain objectives found on page 2 of the AMR, Section 2.1, as a condition of the Conditional Waiver, this section shall provide a narrative of how the objectives were or were not met. Although, it may not be the case during this reporting period, if the objectives were not met, then it should describe the steps to meet the objectives in the next AMR. The next AMR will need to revise the conclusions and recommendations content to meet the reporting requirements.